

FLIGHT

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM.

No. 339. (No. 26, Vol. VII.)

JUNE 25, 1915.

[Registered at the G.P.O. as a Newspaper.] [Weekly, Price 3d. Post Free, 3½d.]

Flight.

Editorial Office: 44, ST. MARTIN'S LANE, LONDON, W.C.

Telegrams: Truditor, Westrand, London. Telephone: Gerrard 1828.

Annual Subscription Rates, Post Free.

United Kingdom ... 15s. 6d. Abroad ... 20s. 6d.

CONTENTS.

	PAGE
Editorial Comment :	
The V.C. Tragedy ...	445
More Honours ...	445
Our Growing Aircraft Fleet ...	445
Can there be Acceleration? ...	446
Pilots the Governing Factor ...	448
The Next Zeppelin Raid ...	448
The Roll of Honour ...	448
Aircraft Work at the Front ...	449
War Honours ...	449
The British Air Services ...	450
Royal Aero Club. Official Notices ...	452
From the British Flying Grounds ...	453
Correspondence ...	454
Flying at Hendon ...	455
The Jannus Flying Boat (with scale drawings) ...	456
Eddies. By "Æolus" ...	458
Aircraft and the War ...	459
Models. Edited by V. E. Johnson, M.A. ...	461

EDITORIAL COMMENT.

The V.C. Tragedy.

With terrible swiftness, the brilliant but meteoric career of Reginald A. J. Warneford, V.C., has been brought to an end by one of those regrettable accidents which with lightning suddenness so often follow upon some outstanding individual achievement. The horror of the news of his untimely end, but a few days after having been awarded the V.C. and the Cross of the Legion of Honour, came as a severe shock, not only to his own people, but to the whole nation. His successful attack on the Zeppelin raider had taken entire possession of public favour, as being unique in the annals of aerial warfare and a deed which appealed directly to the imagination of the people. For this young hero's life to be brought to so sudden a close, when on the threshold of a great career, must be regarded as nothing less than a calamity for both his family and the country. The service can ill spare men of his calibre just now, and we can but join in an expression of respectful sympathy with his mother and sisters in the great blow which has befallen them. If the sting of death can be felt less by the knowledge of the man having done his duty to his King

and country, that solace at least is left to them. The evidence of suppressed grief from the tens of thousands who attended at the interment in Brompton Cemetery of Lieut. Warneford's remains on Tuesday last was silent testimony to their estimate of the young officer's worth, who had already received the great distinction of the V.C. at the hands of his Sovereign.

More Honours.

On the same day as Lieut. Warneford's funeral, the *Gazette* contained notice of honour to the two other distinguished officers—Flight Lieut. J. P. Wilson, R.N., and Flight Sub-Lieut. J. S. Mills, R.N.—who on the same day—June 7th—as that on which the dead officer had achieved his daring deed, destroyed a Zeppelin shed and a Zeppelin airship at Evere. In awarding each of these officers the Distinguished Service Cross, it will be felt that their achievement is, as was suggested in *FLIGHT*, duly acknowledged as of the greatest military value, although in its details of execution perhaps not so dramatic as the attack of the dead hero. We offer our congratulations to the decorated officers upon the formal recognition of their fine work. How, beyond individual and outstanding performances in the Royal Naval Air Service such as these, the services of the other flying service—the Royal Flying Corps—are appreciated may be gathered from the long list published in the *Gazette* on Tuesday last of names of officers and non-commissioned officers appearing in the latest despatch of the Commander-in-Chief, Field-Marshal French, and recommended to notice for gallant and distinguished conduct in the field. This list comprises no less than 31 officers and 12 non-commissioned officers, each one of whom is concerned in some outstanding deed of daring. A pathetic interest attaches to the honours so announced, in the names of several who, although now dead, are included for their services to the country. The names appear in detail elsewhere in this issue of *FLIGHT*, and amongst them will be recognised men whose achievements have already had prominent mention in our columns.

Our Growing Aircraft Fleet.

Parliamentary procedure is a curious piece of machinery, which when understood enables any astute member of the House to chip in upon almost any subject he may wish to investigate, if he only watches his opportunities with care. Probably one of the most indefatigable questioners is Mr. Joynson-Hicks, who exhibits by his

questions, a wide knowledge of the most varied subjects. Particularly is he versed in matters aeronautical, and it is he who, in past sessions, has been prominently responsible for some of the most searching and vital enquiries which have been launched at the responsible officers of the Government. As a rule his thirst for information is well based, and he has elicited both interesting and important facts which in many cases have led up to either modifications of policy or reform in methods. Last week the Member for Brentford was able to move matters a little, by means of a question on the report of the vote of credit for £250,000,000. It was once again his most favourite subject, our Aviation Services. This time the exact point was the supply of aeroplanes. He agreed with Sir John French that, so far as the men were concerned, our air service was absolutely perfect, but it was clear, he said, that throughout the progress of the war those who had control of operations at the front could have done with the assistance of a much larger number of airmen and aeroplanes. Information derived from wounded officers and others who had returned from the front showed that whilst our airmen were able to do practically all that was required in the way of reconnaissance, the German airmen were in greater numbers on many parts of our line. Aeroplanes were essential not only for reconnaissance, but for defence against Zeppelin raids.

The Zeppelins that had come across here had come at such a height that it had been impossible for our aeroplanes to get above them. If we were to meet these airships, it must be done not by one aeroplane, but by what the Chancellor of the Duchy had called a swarm of hornets. It was desirable that the Minister of Munitions should give an assurance that, in dealing with munitions, he would regard as important the provision of a much greater number of aeroplanes than our Army had had in the past. We ought to have larger aeroplanes than we had had up to the present time. The Cuxhaven raid was most effective, but instead of having one raid in the course of the war we ought to have one every week into German territory. After the attacks that had been made on our undefended seaports and the murders of undefended citizens, he would not be too particular as to which German towns bombs should be dropped upon. The Russians were using a large type of aeroplane, with five motors of 100 h.p. each. It was 121 ft. across from the tip of one wing to the tip of the other, and it had carried sixteen men. Such a machine would be perfectly capable of carrying four or five bombs, each containing 400 lbs. or 500 lbs. of high explosives. Such machines would be of immense benefit to our Army. To show how eager our young men were to join this perilous service, he might mention that he had been told at the War Office that there were 500 young men waiting to get into the air service. If that was so, the War Office should see that our schools were enlarged.

Mr. Tennant, in his reply to Mr. Joynson-Hicks, said he was glad to think it was universally admitted by everyone with intimate knowledge of their performances that our airmen were perfect. It was urged by Mr. Joynson-Hicks that we wanted more men and more air machines. That particular criticism could be made equally in respect of artillery and infantry. As a matter of fact, the strength of the air service was very proportionate to that of the rest of the Army, and its expansion since the outbreak of war had been not less in proportion than that of other branches of the service. The expansion in the numbers of pilots had been in the ratio of ten to one, and in

the men of the service generally of five to one. The organisation which had been set up was working harmoniously, smoothly, and with great efficiency. With reference to the larger aeroplane which was in use by the Russians, he could reassure hon. members by stating that we had actually in process of manufacture a similar machine. He did not, however, wish to go into too great detail on the subject. In order to create a sufficient personnel for the air service, additional training facilities had been provided. On the date of mobilisation there was only the Central Flying School, which was able to train twenty pupils, whereas there were now eleven such schools, which were able to train upwards of 200 pupils.

Can
there be
Acceleration?

Without doubt the information contained in Mr. Tennant's reply is sufficient to inspire general confidence, but at the same time we hardly see eye to eye with him in regard to it being sufficient that the expansion of the air service is proportionate to the rest of the army. With the almost incalculable advantages which aircraft in large, not to say huge, numbers would give to us and our Allies, the proportionate increase in this side of the services would still be too small if it were in ten times greater ratio. We do not suggest that strenuous efforts are not being made to keep pace with the demand for aeroplanes, as we believe the very greatest consideration attaches to this important branch of the service, but it would be a serious mistake for the idea to spread that there must be only some rule-of-thumb rate of progression for aeroplanes, in relation to other branches of the fighting forces. Although aviation is but a new science, it has made such headway by sheer merit since the war opened that ordinary considerations as to relative proportions must go by the board. It is, in a way, a power unto itself; a power apart from, although one with, the supreme command. Like with huge masses of irresistible cavalry in the past, no commander-in-chief would now, we believe, be found to say that he could have enough flying officers at his call. With the assurance of the supply of aeroplanes being within the scope of the new Minister of Munitions' functions, we may therefore hope to see the already strenuous efforts to produce more and more aircraft increased until it shall reach its maximum possibility. Our manufacturers may be relied upon to rise to the necessities. Probably the governor to this maximum is the roll of really efficient pilots available.

It must not be accepted that simply because nothing is known generally of the steps taken to counter, as far as possible, the midnight raids of the Zeppelin units, there is stagnation in this direction. It is not of necessity good policy to give an enemy of the craftiness of the Germans all the little items of surprise which may be awaiting them, and it should be remembered that it is the easiest possible task to effectually criticise, where the tongue of the criticised is tied. But it should be a far cry between the howling of the less responsible newspapers, in their endeavour to obtain sensational recognition, and the questioning of a Cabinet Minister in Parliament by a responsible member of that national assembly.

Pilots
the Governing
Factor.

The main governing point of every suggestion for attacks in mass must be Pilots, Pilots, Pilots, and then again Pilots, Pilots, Pilots, coupled with an adequate supply of efficient instructors. This is the reply

JUNE 25, 1915.

FLIGHT



"Flight" Copyright.

The burial of Flight Sub-Lieut. R. A. J. Warneford, V.C., with Naval Honours, at Brompton Cemetery, June 22nd.

to the various queries as to the reason why Essen and other vital German centres are not wiped out by means of daily massed raids, in which tons of destructive-dealing explosives are discharged. In the *Daily Express* of Wednesday Mr. H. G. Wells joins up with the querists, and in the course of a strong manifesto expresses his views as follows:—

"An aeroplane costs scarcely more than a shot from a big gun; if it is lost it means only one or two lives; it would be cheaper to launch two thousand aeroplanes at Essen than to risk one battleship. Two thousand aeroplanes could smash Essen to bits, and if we lost a thousand of them in the raid it would still be cheaper in money and lives than the victory of Neuve Chapelle. But until the Germans attempt things on this scale it is quite improbable that our rulers will try anything so obvious. And it is unlikely that the Germans will attempt things on this scale, because the Zeppelin idea hypnotises them, and because the German has not that quality. And the best of the German human material is probably already largely used up by other things."

There would be no difficulty whatever in the way of doing all that is suggested had the future importance of aerial supremacy been grasped by the Government in the earliest days of aviation, when FLIGHT was hammering in the necessity for action. By this time we might easily have had those 10,000 aeroplanes for which Mr. H. G. Wells is this week asking. And without doubt they would most effectually have justified their cost. Whether the necessary number of pilots could also have been brought to efficiency is altogether another question. But unfortunately in any case the aviation industry in those dark days was up against as stiff a problem to solve as any set of struggling enthusiasts could desire. It is, however, hardly worth while discussing "back numbers" now. It is the present and immediate future that matters. We are sorely afraid, however, that although Mr. Wells, in his magnificently patriotic enthusiasm, will have every Britisher with him, in spirit, in his desire to send great flights of aeroplanes on their war errands, he will have to face facts, as they are, not as he might depict them in one of his inimitable pen-pictures of a few decades hence. Perhaps it would be well for him to ascertain quietly a few of those facts, when we are afraid his splendid ideas of launching a series of flights of a couple of thousand aeroplanes each against the Krupp armament works will have to undergo serious modification. Such numbers of machines are not possible, at even a distance of several months. To supply efficient and sufficient pilots in six times the same period would be an achievement to which we fancy not even the most optimistic pro-aviationist would care to subscribe, whilst there is, in addition, the very important item of wastage of men and machines to be taken into consideration, leaving out for the moment the question of the supply of engines. Our list of flying officers is being steadily augmented, but the Nation can hardly dare to hope, in spite of expert opinion, for such immediate progress as would enable Mr. Wells' very patriotic scheme for ending or shortening the war to be put into execution. If, however, it should be deemed in any way remotely possible, then no consideration of cost should stand in the way. At least in one direction there is highly promising pilot material at hand, in the non-commissioned officers and mechanics of the Flying Services, the employment of whom as pilot-chauffeurs has already been advocated by us in FLIGHT.

⊗ ⊗

The Roll of Honour.

THE following casualty has been announced by the Secretary of the Admiralty:—

Under date June 17th:

Accidentally Killed whilst Flying.

Flight Sub-Lieutenant Reginald A. J. Warneford, V.C., R.N.

The raids of the Germans by means of dirigibles are upon a totally different footing to aeroplane attacks, hence Mr. Wells' contention must go by the board, that "instead of taking up the aerial offensive against Germany, we permit the Germans, whose natural quality in the air is altogether inferior to ours, to carry out offensive raids against us." Our sympathy is altogether with Mr. Wells in his campaign, and although he will have to considerably curtail his programme, his efforts towards inducing even more energy into the aerial sections of our offensive, cannot but have a good effect. How much Mr. Wells' views in the abstract coincide with those so consistently put forward in FLIGHT may be judged by the following extracts from his manifesto in the *Daily Express*, which is headed,

"THE QUICK WAY TO ESSEN."

"HOW TO END THE WAR."

"Every one has heard of the intelligent American who was shown the Boer positions on the Tugela, and who remarked, 'Yes, very strong. But isn't there a way round?' And after we had hammered ourselves sufficiently at Colenso and Spion Kop we found the way round and got into Ladysmith. Now three hundred miles of Frenchmen and thirty or so of Englishmen, and perhaps a score of miles of Belgians are confronting three hundred and fifty or so miles of Germans, and doing their best to break through that line and perform certain engagements they have made with Westphalia and the Rhineland. But the way to the left is barred by the sea, and the way to the right by Switzerland, and though we have started to go round by the Dardanelles, that seems to be likely to prove a more lengthy journey to Berlin than we supposed at the beginning. There is a way, however, to the rear of the Germans, and it is quite open to the French and English to take it whenever they choose, and that way is through the air."

"The way to end the war is to go through the air to the German rear and smash up their munition factories, and it is open to us to take when we choose, for one perfectly simple reason; the German strain cannot produce aviators to compare for one moment with the French and English aviators."

"Man for man we can beat him in the air; it is in the air that we should meet him. It is through the air that our first blows should fall. We could clear him out of the air altogether if we had enough aeroplanes now. That done, his wonderful artillery has become blind, his communications can be destroyed; his arsenals can be smashed up, and an advance upon the ground would be robbed of half its difficulty. Every aviator we have in the air now is worth a hundred men saved from death below."

◆ ◆ ◆

The Next Zeppelin Raid.

No doubt, as a sequence to the Karlsruhe raid by the French, a further series of attacks may be expected in London. It is such a delightful excuse for more frightfulness. But this little retaliation in kind has probably caused more commotion amongst those who have been wildest in their exultation over the bombing of our unprotected towns than the Germans care to admit. How far Karlsruhe is a purely citizen town, leaving out of the question the permanent military character of the city, may be judged by the inscription on a shell case which was found last year in a German gunpit by Mr. Russell Wilkinson, a Hendon resident. The wording indicating the "country of origin" is as follows:—

d.20. AWS. Patronenfabrik, Karlsruhe

(Army Works, Cartridge Factory, Karlsruhe).

Yet the Kaiser is reported to be incensed over the Baden episode, forgetting the total of 83 attacks by aeroplanes and 21 raids by Zeppelins, all upon open towns, as compiled this week by the *Paris Matin*.

⊗ ⊗

The following casualty in the Expeditionary Force has been reported to the War Office:—

Undated:

Previously reported Missing, now reported Killed.

Second Lieutenant I. N. Woodiwiss, Lincoln Regt. and R.F.C.

AIRCRAFT WORK AT THE FRONT.

OFFICIAL INFORMATION.

In the despatch dated June 19th from Sir John French there was the following:—

"The electric fire station at La Bassée was successfully bombarded yesterday by our airmen."

In the despatch received in Cairo on the 22nd inst. from the headquarters of the Mediterranean Expeditionary Force, there was the following:—

"The enemy lost very heavily. One Turkish battalion, coming up to reinforce, was spotted by an aeroplane, and was practically wiped out by the 75's before they could scatter."

In the French official *communiqué* of the afternoon of the 16th inst. there was the following:—

"A German aeroplane was obliged to come to the ground in the French lines near Noroy sur Ourcq (east of Ferté Milon). The aviators were made prisoners."

The evening *communiqué* stated:—

"During Tuesday some bombs were dropped on Nancy, St. Dié, and Belfort by German aeroplanes. At Nancy some civilians were struck."

In the evening *communiqué* of the 17th inst. there was the following:—

"Our bombarding air squadrons effectively bombarded the enemy reserves at Givenchy and at La Folie Wood and dispersed masses of troops in process of formation."

"An enemy aeroplane was brought down by one of our machines in Alsace. Both the German airmen were killed."

In the *communiqué* issued in Paris on Monday night there was the following:—

"Our air squadrons bombarded the aviation parks of the enemy, set fire to four hangars, and hit two aeroplanes and one captive balloon."

The following official note was issued in Rome on the 17th inst.:—

"The Austrians by means of toy balloons are dropping in the Italian lines ridiculous proclamations inviting the Italian soldiers to desert, offering easy employment, good food, and money for the arms which they bring in at the

following rates: For a rifle with equipment, 8s. 4d.; for a machine-gun, £20; for a gun, £80; for an aeroplane, £80; and for a horse, £6. To these childish methods employed by the demoralised Austrian Army our troops are replying, as they have done at every part of the front, by wonderful examples of valour and ardent patriotism."

The following appeared in an official *communiqué* issued in Rome on the 18th inst.:—

"On the night of June 17th, while a naval airship destroyed the railway station at Divacca, our dirigibles were carrying out raids over enemy territory. They apparently bombed effectively positions at Monte Santo and the entrenchments opposite Gradisca, and also damaged very seriously the station at Oviadraga, on the Gorizia-Dornberg line. They returned safely."

The following was included in a *communiqué* issued by the Italian Naval Chief of Staff on the 17th:—

"One of our airships, passing over the enemy's entrenched camps last night, dropped powerful bombs on the important railway junction at Divacca, causing great damage. The airship returned unharmed, despite a vigorous fusillade from the enemy's rifles and machine-guns."

The following was included in a *communiqué* issued by the Naval Chief of Staff on Saturday:—

"Our destroyers (attacking an Austrian naval force at the mouth of the Tagliamento), although counter-attacked by a waterplane, returned safely. Simultaneously we carried out an aerial bombardment of the Austrian lighthouse at Salvare."

"On the other hand, last night we bombarded an Austrian munitions and armament factory near Trieste, with evident success, confining our attack exclusively to this factory."

In a despatch from the Italian Army Headquarters issued on Sunday it was stated:—

"In the evening of the 18th an enemy aeroplane dropped bombs on a Red Cross train which was leaving the station of Cormons. The driver was wounded, and slight material damage was done."

WAR HONOURS.

D.S.C. for Flight Lieuts. Wilson and Mills.

THE following Admiralty announcement appeared in the *London Gazette* of the 22nd inst.:—

The King has been graciously pleased to give orders for the award of the Distinguished Service Cross to Flight Lieutenant John Philip Wilson, R.N., and Flight Sub-Lieutenant John Stanley Mills, R.N., for their services on June 7th, 1915, when, after a long flight in the darkness over hostile territory, they threw bombs on the Zeppelin shed at St. Evere, near Brussels, and destroyed a Zeppelin which was inside. The two officers were exposed to heavy fire from anti-aircraft guns during the attack.

"Mentioned in Despatches."

In the special supplement to the *London Gazette* of the 22nd inst. containing the list of names of those recommended by Field-Marshal Sir John French for gallant and distinguished service in the field there were the following officers, warrant and non-commissioned officers of the Royal Flying Corps:—

☛ Brevet Major B. H. Barrington-Kennett, Grenadier Guards (killed).

Capt. R. J. F. Barton, Royal Scots Fusiliers.

Capt. (temporary Major) W. D. Beatty, R.E.

Lieut. W. C. K. Birch, Yorkshire Regiment.

Brevet Major (temporary Lieut.-Col.) H. R. M. Brooke-Popham, Oxford and Bucks Light Infantry.

Capt. T. W. C. Carthew, 4th Bedford Regiment.

Capt. R. G. Cherry, R.A.

Capt. D. S. K. Crosbie, Argyll and Sutherland Highlanders.

Lieut. G. L. Cruickshank, Gordon Highlanders.

Lieut. (temporary Capt.) W. R. Freeman, Manchester Regiment.

Lieut. H. M. Hankin, Corps of Guides.

Lieut. (temporary Capt.) L. G. Hawker, D.S.O., R.E.

Capt. (temporary Major) F. V. Holt, D.S.O., Oxford and Bucks Light Infantry.

Capt. G. B. Hynes, R.A.

Second Lieut. J. F. Lascelles, Rifle Brigade.

Lieut. (temporary Capt. in Army) C. F. Lee, West Somerset Yeomanry.

Capt. E. R. Ludlow-Hewitt, Royal Irish Fusiliers.

Lieut. (temporary Capt.) R. P. Mills, Royal Fusiliers.

Lieut. A. E. Morgan, 6th Royal Fusiliers (killed).

Capt. C. F. de S. Murphy, Royal Berkshire Regiment.

Temporary Lieut. E. W. Powell.

Lieut. (temporary Capt.) G. F. Pretymann, D.S.O., Somerset Light Infantry.

Lieut. (temporary Capt.) C. E. C. Rabagliati, Yorkshire Light Infantry.

Brevet Major G. H. Raleigh, Essex Regiment (killed).

Lieut. W. B. Rhodes-Moorhouse, V.C., Special Reserve (died of wounds).
 Lieut. (temporary Capt.) H. J. A. Roche, Royal Munster Fusiliers (killed).
 Lieut. C. B. Spence, R.A. (killed).
 Lieut. (temporary Capt.) J. E. Tennant, Scots Guards.
 Brevet Lieut.-Col. H. M. Trenchard, C.B., D.S.O., Royal Scots Fusiliers.
 Lieut. (temporary Capt.) R. M. Vaughan, Royal Inniskilling Fusiliers.
 Lieut. (temporary Capt.) F. A. Wanklyn, R.A.
 556 Corpl. A. Barter. 173 Sergt.-Major S. J. Payne.
 944 Corpl. T. G. Bird. 931 Sergt. E. C. Rumford.
 546 Corpl. C. R. S. Evans. 72 Sergt. F. F. Traylor.
 1112 Flight-Sergt. J. Fulton. 10 Sergt.-Major W. Waddington.
 272 Sergt. E. J. P. Kelly. 191 Sergt. W. G. Webb.
 270 Sergt.-Major J. Mead. 23 Sergt.-Major J. Wilkinson.

Further Rewards.

A SPECIAL supplement to the *London Gazette* issued on Wednesday evening stated that:—

"His Majesty the King has been graciously pleased to approve of the undermentioned Honours and Rewards for distinguished service in the Field, with effect from June 3rd, 1915, inclusive:—

To be Extra Aides-de-Camp to the King.

Major and Brevet Lieut.-Col. H. M. Trenchard, C.B., D.S.O.,

Royal Scots Fusiliers and Royal Flying Corps, and to be Brevet Colonel.

Royal Flying Corps.

Brevet Major.—Capt. (temporary Major) W. D. Beatty, Royal Engineers; Capt. (temporary Major) S. D. Massy, Indian Army.

Companions of the Distinguished Service Order.—Brevet Major (temporary Lieut.-Col.) H. R. M. Brooke-Popham, Oxfordshire and Buckinghamshire Light Infantry; Capt. T. W. C. Carthew, Bedfordshire Regt. (Special Reserve).

The Military Cross.—Lieut. (temporary Capt.) B. T. James, Royal Engineers; Lieut. (temporary Capt.) R. M. Vaughan, Royal Inniskilling Fusiliers; Lieut. (temporary Capt.) F. A. Wanklyn, Royal Artillery; Lieut. G. L. Cruickshank, Gordon Highlanders; Second Lieut. J. F. Lascelles, Rifle Brigade.

Royal Regiment of Artillery.

The Military Cross.

Second Lieut. R. A. Archer (attached Royal Flying Corps).

Royal Flying Corps.

Distinguished Conduct Medal.

1370 Sergt. R. H. Carr (now	1082 Corpl. H. Jameson.
Sec. Lieut. in S. R. of O.).	1836 1st Class Air-Mech. L. S. Newns.
672 Corpl. W. Dobbie.	836 Corpl. R. E. P. Paynter.
671 1st Class Air-Mech. W. Harper.	1376 Sergt. E. R. C. Scholefield (now Sec. Lieut. in S. R. of O.).
255 Flight-Sergt. W. C. Hayward.	306 Flight-Sergt. T. G. Tindale.
15 Flight-Sergt. T. Hughes.	

THE BRITISH AIR SERVICES.

Royal Naval Air Service.

THE following appeared among the Admiralty announcements of the 15th inst.:—

Seaman F. W. Walker (R.N.V.R.) transferred to R.N.A.S. as Probationary Flight Sub-Lieutenant, for temporary service, with seniority of June 21st.

The following appeared among the Admiralty announcements of the 16th inst.:—

Air-Mechanic S. Kemball promoted to Probationary Flight Sub-Lieutenant, for temporary service, with seniority of June 15th, and appointed to "President," additional, for the R.N.A.S.

The following entries have been made: C. H. M. Chapman, C. O. Carden, J. B. Cussen, and W. Croucher, all as Probationary Flight Sub-Lieutenants, for temporary service, with seniority of June 21st, and appointed to "President," additional, for R.N.A.S.

The undermentioned have been granted temporary commissions, and appointed, with seniority as follows: A. Rawlinson, as Lieutenant-Commander (R.N.V.R.), June 15th, and to "President," additional, for duty with the Armoured Car Aeroplane Support; C. J. Price, as Lieutenant (R.N.V.R.), June 2nd, to "President," additional, for R.N.A.S. (Armoured Cars); G. M. Morse and E. J. Hanna, as Sub-Lieutenants (R.N.V.R.), June 2nd, and to "President," additional, for R.N.A.S. (Armoured Cars); F. W. M. Moore and M. H. Rattray, as Sub-Lieutenants (R.N.V.R.), June 4th, and to "President," additional, for R.N.A.S. (Armoured Cars); J. E. Arrol-Hunter, as Sub-Lieutenant (R.N.V.R.), June 15th, and to "President," additional, for duty with the Armoured Car Aeroplane Support.

Assistant-Paymaster.—T. A. Batchelor, to "President," additional, for Naval Air Station, Calshot, for special duty, temporary. To date June 15th.

The following appeared among the Admiralty announcements of the 17th inst.:—

Flight-Commanders C. E. Maude, to "President," additional, for R.N.A.S., and A. J. Miley, to the Air Department, Admiralty, as Assistant to Director of Air Department, vice Maude. Both to date June 15th.

Temporary Lieut. (R.N.V.R.) F. A. Brock, granted commission as Flight-Lieutenant, with seniority of Jan. 1st, and reappointed to "President," additional, for R.N.A.S.

G. T. Davies has been granted a temporary commission as Lieutenant (R.N.V.R.), with seniority of June 16th, and appointed to "President," additional, for R.N.A.S.

The following appeared among the Admiralty announcements of the 18th inst.:—

Capt. P. Owen (R.M.) graded as Acting Flight-Commander, with seniority of June 1st.

Temporary Sub-Lieut. N. S. Lott (R.N.V.R.) to "President," additional, for R.N.A.S. June 17th.

The following appeared among the Admiralty announcements of the 21st inst.:—

Temporary Lieuts. (R.N.V.R.) A. Mackilligin and E. Roberts

both entered as Flight-Lieutenants, for temporary service, and reappointed to the "President," additional, for R.N.A.S. To date June 1st, temporary commission as Lieutenants R.N.V.R. terminated.

Temporary Sub-Lieut. H. McClelland entered as Probationary Flight Sub-Lieutenant, and appointed to the "President," additional, for R.N.A.S. To date June 26th, temporary commission as Sub-Lieutenant R.N.V.R. terminated.

J. Anderson, A. Brown, R. Robertson, H. Smith, R. Spence, R. Spinney, and J. Williams all granted temporary commission as Lieutenants R.N.V.R., and appointed to the "President," additional, for R.N.A.S.; to date June 13th. A. Lingard and F. Bedford both granted temporary commission as Lieutenants R.N.V.R., and appointed to the "President," additional, for R.N.A.S.; to date June 15th.

A. Creighton, D. Kent, R. Perks, and T. Ross all granted temporary commissions as Sub-Lieutenants R.N.V.R., and appointed to the "President," additional, for R.N.A.S. G. P. Stanley and W. Power both granted temporary commission as Lieutenants R.N.V.R., and appointed to the "President," additional, for R.N.A.S. To date June 19th.

E. Jamieson, S. Smith, F. Bishop, and L. Briffault all entered as Probationary Flight Sub-Lieutenants, for temporary service, and appointed to the "President," additional, for R.N.A.S.

Royal Flying Corps (Military Wing).

THE following appeared in the *London Gazette* of the 16th inst.:—

Supplementary to Regular Corps.—Second Lieutenants (on probation) confirmed in their rank: Leo F. Page and Alexander B. Bendall. To be Second Lieutenants (on probation): Basil G. McEwen; May 28th, 1915. Oscar Greig; May 29th, 1915. June 1st, 1915: Charles E. Wardle and Keith D. P. Murray. June 2nd, 1915: Archibald M. Low, William D. S. Sanday, and Eric B. Broughton.

The following appeared in a supplement to the *London Gazette* published on the 17th inst.:—

Supplementary to Regular Corps.—Second Lieutenant (on probation) confirmed in his rank: Lionel M. Bennett.

The following appeared in the *London Gazette* of the 18th inst.:—

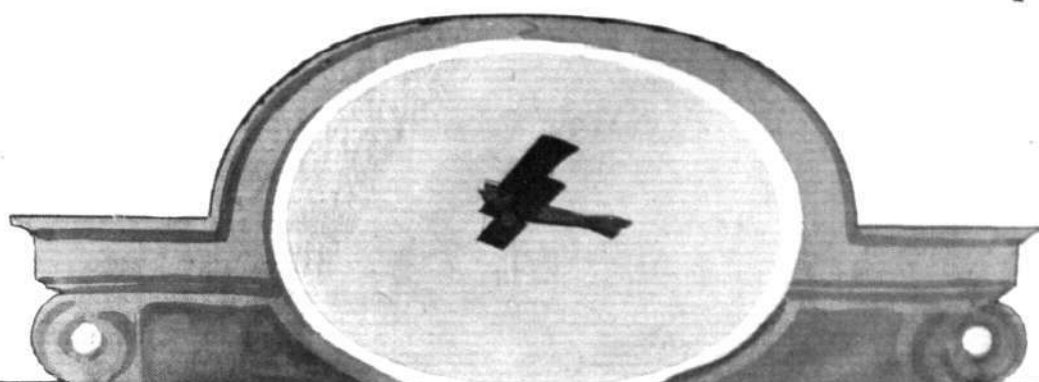
Flying Officers to be Flight Commanders.—May 25th, 1915: Lieut. Norman C. Spratt, Special Reserve, and to be temporary Captain whilst so employed; Capt. Thomas W. C. Carthew, 4th Batt. Bedfordshire Regt.

Flying Officers.—June 4th, 1915: Lieut. H. A. P. Disney, 2nd Batt. Cambridgeshire Regt., T.F.; Second Lieut. W. Reid, 6th (Rifle) Batt. King's (Liverpool Regt.), T.F.

The following appeared in a supplement to the *London Gazette* issued on the 21st inst.:—

Sgt.-Majors to be Quartermasters, with the honorary rank of Lieutenant: Egbert J. Parker and Stanley J. Payne. June 1st, 1915.

Supplementary to Regular Corps.—To be Second Lieutenants (on probation): Herbert A. Johnston; May 31st, 1915. Walter E. Baylis; June 14th, 1915.



KONDOR



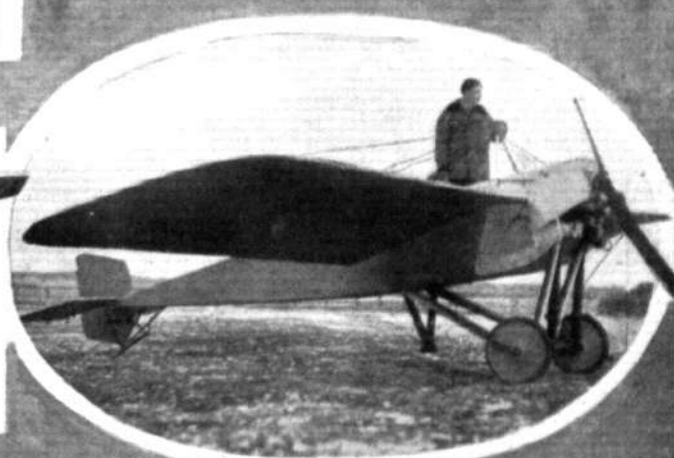
KONDOR



GOEDECKER



L.F.G.



HANUSCHKE



FOKKER



KONDOR

SOME NEW GERMAN MILITARY MACHINES.—A very marked tendency towards the standardisation of the Albatros and L.V.G. type of biplane will be noticed. An exception is the Fokker biplane with a rotary engine, evidently designed for scouting purposes. The Hanuschke monoplane, to put it mildly, has a strong family resemblance to the Morane-Saulnier.

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

Aviators' Certificates.

THE following Aviators' Certificates have been granted :—

- 1322 2nd Lieut. James Clifford Turner, R.F.A. (Maurice Farman Biplane, Military School, Shoreham). April 12th, 1915.
- 1323 2nd Lieut. Claude Herschell Kelway-Bamber (14th Royal Fusiliers) (Maurice Farman Biplane, Military School, Farnborough). May 20th, 1915.
- 1324 2nd Lieut. Charles David Danby, R.E. (Maurice Farman Biplane, Military School, Shoreham). May 31st, 1915.
- 1325 Flight Sub-Lieut. Lionel Arthur Hervey, R.N.A.S. (Short Biplane, Royal Naval Air Station, Eastbourne). June 1st, 1915.
- 1326 2nd Lieut. David Alexander Glen (Manchester Regt.) (Maurice Farman Biplane, Military School, Farnborough). June 4th, 1915.
- 1327 Lieut. Norman Macdonald Martin (38th Central India Horse) (Maurice Farman Biplane, Central Flying School, Upavon). June 7th, 1915.
- 1328 2nd Lieut. John Molyneux Kenny, A.S.C. (Maurice Farman Biplane, Military School, Farnborough). June 9th, 1915.
- 1329 2nd Lieut. Fred Hunter (Gordon Highlanders) (Maurice Farman Biplane, Military School, Farnborough). June 11th, 1915.
- 1330 Sergt. Walter George Webb, R.F.C. (Maurice Farman Biplane, British Flying School, Le Crotoy, France). June 11th, 1915.
- 1331 2nd Lieut. Percy Edward Lovell Gethin (Maurice Farman Biplane, Military School, Farnborough). June 11th, 1915.
- 1332 Lieut. John Edward Dixon-Spain, R.F.A. (Maurice Farman Biplane, British Flying School, Le Crotoy, France). June 12th, 1915.
- 1333 Lieut. Morris Gordon Farrar Richardson (Northumberland Fusiliers) (Maurice Farman Biplane, Military School, Farnborough). June 13th, 1915.
- 1334 Lewis Edward Brown Greaves (Maurice Farman Biplane, Military School, Brooklands). June 14th, 1915.
- 1335 Hubert Charles Gerrard Allen (Maurice Farman Biplane, Royal Naval Air Station, Chingford). June 16th, 1915.
- 1336 Geoffrey Kelvin Blandy (Caudron Biplane, Beatty School, Hendon). June 16th, 1915.
- 1337 Lieut. Richard James Tipton, R.F.A. (T.F.) (Maurice Farman Biplane, Military School, Northolt). June 19th, 1915.

- 1338 Flight Sub-Lieut. Francis John Linnell, R.N.A.S. (Grahame-White Biplane, Grahame-White School, Hendon). June 19th, 1915.
- 1339 2nd Lieut. Harry Francis Tozer Blowey, R.F.A. (Maurice Farman Biplane, Military School, Northolt). June 19th, 1915.
- 1340 Flight Sub-Lieut. Desmond Joseph Sheehan, R.N.A.S. (Maurice Farman Biplane, Royal Naval Air Station, Chingford). June 19th, 1915.
- 1341 2nd Lieut. Michael Henry Braddon Nethersole, R.G.A. (L. and P. Biplane, London and Provincial School, Hendon). June 21st, 1915.

THE FLYING SERVICES FUND

administered by

THE ROYAL AERO CLUB.

THE Flying Services Fund has been instituted by the Royal Aero Club for the benefit of officers and men of the Royal Naval Air Service and the Royal Flying Corps who are incapacitated on active service, and for the widows and dependants of those who are killed.

The Fund is intended for the benefit of all ranks, but especially for petty officers, non-commissioned officers and men.

Forms of application for assistance can be obtained from the Royal Aero Club, 166, Piccadilly, London, W.

Subscriptions.

	£	s.	d.		£	s.	d.
Total subscriptions received to June 16th, 1915...	9,243	1	8	Employés of the Blackburn Aeroplane and Motor Co., Ltd. (Fourth contribution)	1	2	3
A Lancashire Lass ...	1	0	0	W. C. Teacher ...	5	0	0
H. C. Jackson ...	5	0	0	Mrs. Wemyss-Whittaker	2	0	0
Trustees of the late Mr. Josiah Vavasour, C.B. ...	10	10	0	Total, June 23rd, 1915 ...	9,267	13	11
166, Piccadilly, W.	B. STEVENSON, Assistant Secretary.						

Air Raid and Official Advice.

THE Commissioner of Metropolitan Police has issued the following advice in regard to future air raids :—

"In all probability, if an air raid is made, it will take place at a time when most people are in bed. The only intimation the public are likely to get will be the reports of the anti-aircraft guns or the noise of falling bombs. The public are advised not to go into the street, where they might be struck by falling missiles; moreover, the streets, being required for the passage of fire-engines, &c., should not be obstructed by pedestrians.

"In many houses there are no facilities for procuring water on the upper floors. It is suggested, therefore, that a supply of water and sand might be kept there, so that any fire breaking out on a small scale can at once be dealt with. Every one should know the position of the fire alarm post nearest to his house. All windows and doors on the lower floor should be closed to prevent the admission of noxious gases. An indication that poison gas is being used will be that a peculiar and irritating smell may be noticed following on the dropping of the bomb.

"Many inquiries have been made as to the best respirator. To this question there is no really satisfactory answer, as until the specific poison used is known an antidote cannot be indicated. There are many forms of respirator on the market for which special advantages are claimed, but the Commissioner is advised by competent experts that in all probability a pad of cotton-waste contained in gauze to tie round the head, and saturated with a strong solution of washing soda, would be effective as a filtering medium for noxious gases, and could be improvised at home at trifling cost. It should be damped when required for use, and must be large enough to protect the nose as well as the mouth, the gauze being so adjusted as to protect the eyes.

"Gas should not be turned off at the meter at night, as this practice involves a risk of subsequent fire and of explosion from burners

left on when the meter was shut off. This risk outweighs any advantage that might accrue from the gas being shut off at the time of a night raid by aircraft. Persons purchasing portable chemical fire extinguishers should require a written guarantee that they comply with the specifications of the Board of Trade, Office of Works, Metropolitan Police, or some approved fire prevention committee.

"No bomb of any description should be handled unless it has shown itself to be of incendiary type. In this case it may be possible to remove it without undue risk. In all other cases a bomb should be left alone and the police informed."

Compensation for Air Raid Damage.

It is announced by the Treasury that the terms of the East Coast Raid Committee's reference have been extended to cover claims for damage sustained during air raids occurring up to June 17th. Claims need not be in any particular form, but should specify accurately the person or property injured. Claims should be forwarded to the secretary, East Coast Raids Committee, Board of Education, Whitehall, S.W., not later than June 30th. No further public notice to applicants will be issued by the committee.

Air Raid Damage Insurance.

In the House of Commons on Monday Sir W. Pearce asked if, as the ordinary fire insurance policy did not appear to cover incendiary fires proved to have been the work of enemy agents, the Government would take steps to meet this kind of liability.

Mr. Runciman, President of the Board of Trade, who replied, stated that he was at present considering whether a scheme could be devised to cover loss and damages by bombardment and aircraft in so far as such damage and loss are not covered by the terms of the ordinary fire insurance policy. The payment of adequate premiums by the persons insuring their property would, of course, form an essential feature of any scheme. He hoped to be able to make an announcement shortly.

FROM THE BRITISH FLYING GROUNDS.

London Aerodrome, Collindale Avenue, Hendon.

Grahame-White School.—Last week, rolling and straights with instructor: Probationary Flight Sub-Lieuts. Roach-Pierson, Hardman, Pearson, Sievking, Watkins. Circuits and eights: Probationary Flight Sub-Lieuts. Cadbury and Linnell. *Brevets*: Probationary Flight Sub-Lieuts. Cadbury and Linnell. Instructors during week: Messrs Manton, Russell and Winter.

Beatty School.—The following pupils were out during last week, accompanied by the instructors:—Messrs. Arbon (8 mins.), Banks (14), Bond (21), Chalmers (43), Delves (18), Fawcett (5), FitzHerbert (15), Fox (7), Holland (15), King (10), Morgan (15), Ross (10), Rutherford (6), Spicer (14), Tomlinson (23), Vickers (16), Whincup (6), Boyle (10), and Kenworthy (141). The instructors were Messrs. G. W. Beatty, W. Roche Kelly, C. B. Prodder, and P. A. Johnston, the machines in use being Beatty-Wright dual control and single-seater propeller biplanes and Caudron tractors.

On Wednesday evening, in spite of very unfavourable weather, Mr. G. K. Blandy took an extremely good ticket on the 45 h.p. Caudron; he is now taking extra practice at the school.

Mr. Kenworthy put in 2 hours 20 mins. extra practice during the week, flying very consistently, his altitude ranging from 2,000 to 4,000 ft.

Exhibition flights were given on three machines on Thursday, Saturday, and Sunday, also three passenger flights were taken.

Hall School.—The work at the school last week comprised, with Instructors Herbert James and C. M. Hill: Messrs. Gay, Millbourne, Lieut. Grant, Mr. Snowdon, Mr. Gordon, Mr. Yonge, Lieut. Phillpotts, Mr. Hatchman and Mr. C. H. Bell. With Instructor H. F. Stevens: Lieut. Raymond-Barker making very good straight flights, Messrs. Snook and Furlong pro-

gressing well with half-circuits, Mitchell straights. Passenger flights with Mr. H. F. Stevens: Mr. Richardson (15). Machines in use: Hall tractor biplanes.



Copyright, F. N. Birkett, from the F.N.B. series of aviators.

Flight Sub-Lieut. G. H. Jackson, R.N.A.S., who has recently taken his ticket at the Grahame-White School, Hendon.



Mr. A. J. Turner.



Mr. P. G. Allen.

Two pilots who have just obtained their pilot's certificates at the London and Provincial School, Hendon.

London and Provincial Aviation Co.—On Tuesday last week, Mr. M. G. Smiles climbed 6,500 ft. on our new 40 h.p. machine.

Wednesday, Messrs. Irwing, Wattine, Dower, Minter and Nethersole straights. Messrs. Sykes, Scott, Wood, Adams, and Pullinger rolling.

Thursday, Messrs. Minter and Jacques straights. Scott, Sykes, and McOnie rolling. Friday, very windy.

Saturday, Messrs. Irwing and Nethersole circuits and half-circuits. Messrs. Adams, Scott, Minter, Sykes, Wood, Pullinger, and McOnie rolling and straights.

Sunday, Mr. Nethersole circuits and eights and practising landing on the mark.

Ruffy-Baumann School.—Last Sunday week, on 60 R.B., Mathewson (5 mins.), Sykes (8), Bell (10). On 50 h.p. Caudron type: Bell (6), England (4), Cole (6). Sykes (6). One passenger.

CORRESPONDENCE.

National Insurance Against Aircraft Raids.

[1904] We are quite in sympathy with your efforts to make damage by enemy aircraft a national liability, but the problem is not quite so simple as it appears. Sufferers by enemy operations are many, and if one class of victims is indemnified by the State, the others will legitimately ask why they should be left to shift for themselves.

Ship-owners may well complain about increased premiums if property owners on land pay nothing for the privilege of sending the Government a bill for a new roof or a dead cow. Much as it may be to the interest of the ship-owner to keep his vessels at work, it is vital to the nation that there should be no stoppage.

Many a fine man in Kitchener's Army, after sacrificing a good income, is paying a heavy war extra for life insurance, because he dreads leaving his family to exist on compensation based on the needs of a labourer. Numbers of regular officers have dropped policies because the extra premium was beyond their means. Aviators cannot obtain insurance at any price. Then there is the vast host whose business has been chopped off by the war.

All these classes have been hit by the enemy. Although the blow did not fall from the sky in the middle of the night, it is felt just the same. Many of them have nothing to fear from Zeppelins, and unless we have State compensation all round, they are entitled to protest at having to bear the burdens of others in addition to their own.

Whether Lloyd's underwriters have, as you say, pocketed many thousands of pounds of easily earned premiums remains to be decided. An extensive raid may easily bring in sufficient claims to present a very different picture.

The fact that tariff companies have refused aircraft risks proves that the strongest combinations regard the business as too hazardous. Limited powers probably have something to do with it, as you point out, but that obstacle would not remain long if the companies really thought the business tempting. In the face of this, credit must be

The Tragedy of Sub-Lieut. Warneford.

ELSEWHERE in this issue we refer to the loss sustained by the Flying Services and the nation by the death of Flight Sub-Lieut. Warneford, and below we briefly record the facts regarding the fatal accident.

It appears that the deceased officer had gone to Buc on the 17th inst. to test a new biplane, and took up an American journalist, Mr. Henry Beach Needham, who had asked to be taken as a passenger. When flying at a height of 700 ft. the machine, while making a sharp right-hand turn, was struck by a gust of wind, and side-slipped. The pilot and passenger, not being strapped to their seat, were thrown out, and the machine crashed to the ground. Mr. Needham was killed on the spot, and Lieut. Warneford died while being taken to the British Military Hospital at Versailles, in the car of Mme. de la Roche.

On Monday afternoon, Lieut. Warneford's body was brought to England, and on the following day was buried in Brompton Cemetery, full naval honours being rendered by the Royal Naval Air Service and the Royal Naval Division. A vast crowd, besides his mother, sisters, and other members of the family, attended the last rites to the dead V.C.

Previous to the funeral, Mrs. Corkery, mother of Flight Sub-Lieut. Warneford, V.C., received the following telegram:—

"The King and Queen have received with deep regret the news

Wednesday last week, on the 60 R.B.: MacBeane (8 mins.), Crawford (12), Fenning (11), Sykes (10), Dixon (10), Robertson (10), and Perrins (6). On 50 Caudron type: Bell (10), Crawford (6), Fenning (9), England (5), Wilson (6), and Wallis (3).

Thursday, one passenger. Balfour (10 mins.) on R.B.

Saturday, on 60 h.p. R.B.: Balfour (6 mins.), Wilson (6), Boisson (5), Hudson (7), two passengers. On 50 Caudron type: Balfour (8), May (6), England (7), Sykes (6), and Bell (10).

Sunday last, on 60 R.B.: Cole (6 mins.), Wilson (10), Brand (10), and Balfour (15). On 50 Caudron type: Cole (6), Wilson (6), England (6), Sykes (6), Brand (6), and Balfour (10).

The week was an exceptionally good one, the weather being favourable. Instructors: Edward Baumann, Felix Ruffy, Gino Virgilo, and Clarence Winchester.

given to the underwriters for their courage and initiative in offering the public a protection unobtainable elsewhere.

A Government scheme will steady the market. This was undoubtedly of great benefit in the early days of the war. Premiums for marine insurance came down with a run when the Government undertook the risk. But to-day, Lloyd's rate is cheaper and the policy more comprehensive than that of the Government.

Apart from other questions, the difficulties facing a Government insurance scheme are tremendous. A vessel at the bottom of the sea is finished with, it is simply a question of passing over a cheque. But a factory with a hole through it or a residence with the piano scorched and some antiques burned means trouble. This is not altered by the fact that some vessels get back to port partly damaged. Values are more easily ascertained in marine business.

The happiest solution we can see is a combination of the suggested remedies. Let the Government stand the first £100 or £200; fix a rate for insuring property above that value; and agree to indemnify the underwriters and the companies if claims exceed a fixed sum. This would safeguard the very poor; keep premiums down, and relieve the Government of unnecessary work at a time when they want all their energies for warfare.

VARNIER AND CO.

Windsor House, Kingsway, W.C., June 21st.

[As our articles have indicated, we do not contend necessarily for a free insurance, but would be content to see the Government take the whole subject in hand from a national point of view, thereby regulating the premium to a proper figure. Our correspondents make several good points, but the question of aircraft insurance is upon a different footing, to our mind, to the special cases instanced. Were the Government to take entire responsibility, the moral effect upon the people would more than justify any cost, especially as we believe the amount of damage likely to accrue in the aggregate is not likely to be really serious, comparatively with other war liabilities. It is in any case very satisfactory to note from official statements that the Government will compensate for damage, &c., done by aircraft up to June 16th, and that it has now been definitely decided to inaugurate some form of national aircraft risk insurance. We await the details of the scheme with much interest.—ED.]

of the death of your son, on whom His Majesty so recently conferred the Victoria Cross. Their Majesties much deplore the loss of so gallant an officer, and desire me to convey to you the expression of their sincere sympathy with you in the irreparable loss you have sustained.

"KEEPER OF THE PRIVY PURSE,
"Buckingham Palace."

To this Mrs. Corkery replied:—

"Mrs. Corkery presents her loyal duty to their Majesties the King and Queen, and begs to express her deepest gratitude for their Majesties' telegram of sympathy, with which she is greatly touched. Mrs. Corkery is proud that her son's life has been laid down for his King and country."

In addition Mrs. Corkery also received from H.M. Queen Alexandra an expression of sincere condolence in her great grief.

On Wednesday evening Mrs. Corkery received from the Admiralty the Victoria Cross, which had been awarded to her son, accompanied by the following sympathetic remarks:—

"Their lordships deeply deplore the sad occurrence which has prevented your son from being personally invested with this decoration by His Majesty, and they desire to record their high appreciation of the signal service rendered by him and their sense of the great loss sustained by the death of this intrepid young officer, following as it did so shortly after the brilliant achievement which will always be associated with his name."

FLYING AT HENDON.

LAST Saturday's proceedings opened unofficially with a remarkable demonstration by W. Rowland Ding on a Blackburn-B.E. 2C. This machine took the air like a pantomime fairy in the transformation scene, or, to put it in more technical phraseology, like a helicopter. It seemed impossible to stall the machine in the true sense of the word, for when it could climb no more, it—without the aid of the pilot—simply put its nose down and proceeded in a more horizontal attitude. During the afternoon Ding made four other flights, one of which was for the hour test. On this occasion, accompanied by an

joined him on the other Ruffy-Baumann biplane (60 h.p. Gnome), and then followed several other flights by Kelly Osipenko, and Marcus D. Manton, the latter flying the 50 h.p. G.-W. school 'bus. About this time a Maurice Farman shorthorn left for Eastchurch piloted by Lieut. "Somebody." The next up were Moore on the L. and P., J. S. B. Winter on the G.-W. 'bus, and W. Birch-enough on a Henry Farman. The final flights of the afternoon were made by Kelly on the 50 h.p. Beatty, Osipenko on the 100 h.p. G.-W. five-seater, and Baumann on the 50 h.p. Ruffy-Baumann.



A Blackburn-built B.E. C2 machine in flight at Hendon.

observer, he reached an altitude of over 10,000 ft., without forcing the machine. The first official flight of the afternoon was put up by M. Osipenko on the 50 h.p. G.-W. school 'bus, J. H. Moore following him on his 45 h.p. L. and P. biplane. Both these pilots went up again after short intervals, and reported the air as rather bumpy. E. Baumann then ascended on the 50 h.p. Ruffy-Baumann biplane, whilst the 50 h.p. (Gnome) and the 60 h.p. (Wright) Beatty biplanes were flown by W. Roche-Kelly and C. B. Prodger respectively. After this Baumann ascended once more, and G. Virgilio



The Output of Aeroplanes.

REPLYING to a question in the House of Commons by Mr. Lynch as to the possibility of fabricating in this country 3,000 aeroplanes in six months, Mr. Tennant, the Under-Secretary for War, said that no good purpose would be served by giving orders on so large a scale for the production of aeroplanes at present. This was not a service which could be improvised in a hurry. Steady development had been in progress since the beginning of the war, and this development would continue as rapidly as possible. The training of pilots required both time and care, and the output both of machines and pilots was engaging constant attention. The development of this arm of the Service was a legitimate source of gratification to the country. He did not himself think it would be possible by co-ordinating the efforts of private firms to produce without additional plant 3,000 aeroplanes in six months. It was one of those questions which would have to be very carefully gone into. He thought the Minister of Munitions would be the proper Minister to reply on that point.

Sunday's flying was much the same as Saturday's; there was a very good attendance, and many passengers were taken up. The pilots and the machines out included Marcus D. Manton, J. S. B. Winter, and M. Osipenko on 50 h.p. G.-W. 'buses and, with the last-named pilot at the joy-stick, the 100 h.p. G.-W. five-seater; J. H. Moore on his 45 h.p. L. and P.; P. A. Johnston on the 45 h.p. Beatty Caudron; W. Roche-Kelly and C. B. Prodger on Beatty biplanes; E. Baumann and G. Virgilio on Ruffy-Baumann biplanes; and J. L. Hall on the new 50 h.p. Hall fuselage tractor.



The Fatal Accident at Brooklands.

It is with the greatest regret that we have to record the accident on Monday morning which cost the life of Major H. T. Lumsden, officer commanding the Royal Flying Corps school at Brooklands. According to the evidence at the inquest, Major Lumsden ascended as passenger on a machine piloted by Lieut. Carpenter. When flying outside the aerodrome at a height of 120 ft. the engine stopped; the machine started to glide down, but a sharp turn had to be made to avoid some trees, and the machine crashed to the ground near Addlestone. The pilot was badly bruised and shaken, but Major Lumsden was so injured that he died four hours later in hospital. The inquest was adjourned until Lieutenant Carpenter could attend.

A Fatality at Shoreham.

In the Brighton military hospital on Wednesday, Lieut. R. F. Morkill, East Yorks Regiment, attached to the Royal Flying Corps, died from injuries received in a flying accident at Shoreham on the previous evening.

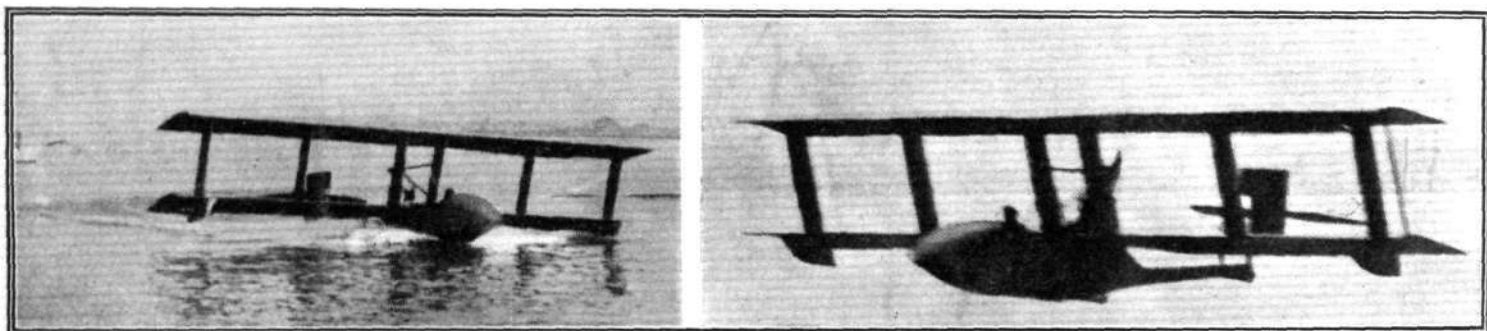
THE JANNUS FLYING BOAT.

WHEN the Jannus brothers, Antony and Roger, who made their names as pilots of those successful flying boats built by the Benoist Company, announced last year that they were going to start on their own account, and design and construct flying boats, it was realised that their experience should result in the production of a very useful craft. It is not surprising, therefore, that now the first product of the Jannus firm has made its test at Baltimore it has more than fulfilled expectations.

Although the Jannus machine appears to follow the usual lines of flying-boat design, there are, as a matter of fact, many original features embodied in its design, mostly as regards construction. The principal objectives of the designers have been sea-worthiness, wide range of speed, quick assembling and dismantling, comfortable and clean accommodation for pilot and passengers, and general efficiency. As regards the former item, tests have shown that there is little to be desired in this respect. This has been brought about by the low centre of gravity and the large freeboard, as well as other points in the design of the hull. In addition, the special form of wing tip floats assists largely in this matter. These taper sharply towards the bottom, reducing the planing surface at high speeds, so that there is little or no pounding action on the wings. At the same time, when acting as floats, they quickly displace

up in the hull, drives by means of a chain the propeller, which is situated at the trailing edge of the planes and is mounted directly on the boat, being quite independent of the planes. This is quite an important feature, for should the planes through any cause become strained, the propeller and engine do not get out of alignment, and, again, the planes can be taken down without interfering with the power plant. The rear portion of the boat tapers from the section of the fore-hull to a shallow vertical knife-edge at the rear.

The planes, which form a complete unit, are of rectangular plan form, having a span top and bottom of 45 ft. 10 ins., a chord of 5 ft. 6 ins., and a gap of 6 ft. The top plane is staggered forward about 18 ins. Perhaps the most interesting feature is the interplane strut construction. These struts are arranged in six pairs, the fore and aft struts of each pair being situated only some 18 ins. apart, and both are enclosed in a fabric covering. Each pair is thus effectively streamlined—a similar practice to that carried out on the Avro-Arrow scout and the D.F.W.-Arrow scout. Besides increased efficiency, this construction makes for strength, each pair of struts being braced by horizontal struts and wire bracing. The struts being mounted in the main spars, the latter are necessarily situated in the centre of the planes the same distance apart as the former, but being



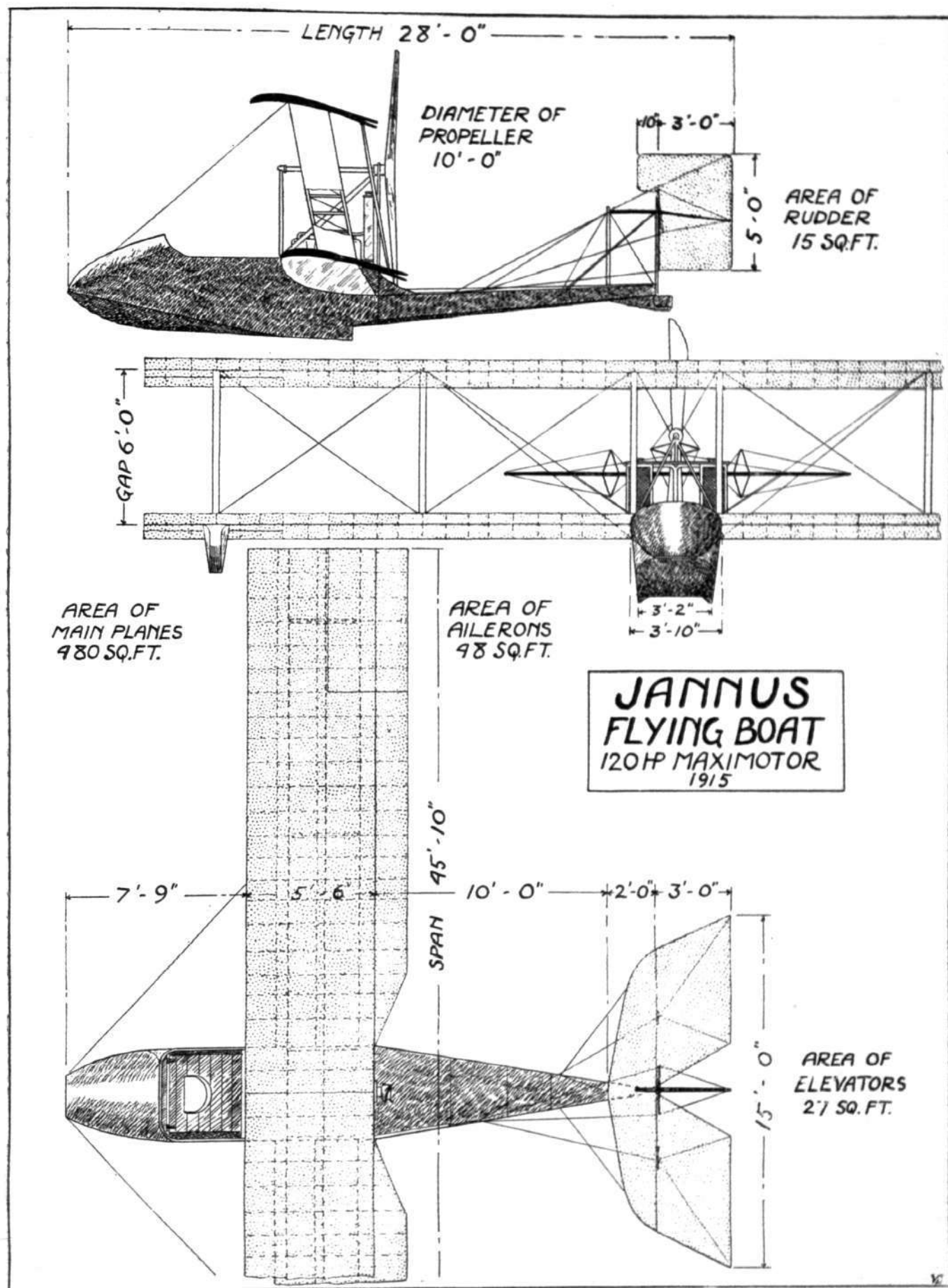
Two views of the 120 h.p. Jannus flying boat.—On the left, leaving the water; and on the right, in flight.

the water at an increased rate, and overcome any heavy side load.

The hull, which is of the single step type, is divided into two portions, a fore portion containing the pilot, passengers, engine and main planes, and a rear detachable portion carrying the tail planes. This possesses advantages not only in construction, but in facility for shipping. The control cables from the cockpit to the tail all pass through a steel conduit which protects them against the propeller breaking, whilst they are provided with the Jannus sister hook, which locks them together quickly so that their adjustment is not affected when the tail is detached. The fore portion of the hull has a beam of 46 ins. at the top, tapering to 38 ins. at the bottom. The latter is concave at the step, after which it is slightly convex, curving upwards at the nose. A turtle deck in the bows protects the pilot from wind and spray. Behind the pilot's seat is a wide seat for three passengers, who have plenty of leg-room—in fact, the cockpit is exceptionally roomy. Immediately behind is the engine compartment, which is isolated from all other parts of the boat so that any oil or grease is confined to this compartment. The engine, a 120 h.p. 8-cylinder water-cooled Maximotor mounted fairly high

strongly cross-braced in between the spars, the whole frame is by no means weak; wood battens form the leading and trailing edges. A balancing flap measuring 6 ft. by 2 ft. is hinged to each outer extremity of the rear spars of both top and bottom planes. The tail planes consist of a fixed stabilising surface 12 ft. span by 2 ft. chord, to the trailing edge of which are hinged two elevators of $13\frac{1}{2}$ sq. ft. area each. In between the latter is a partially balanced rudder, connected with which at the stern of the boat is a small water rudder. The horizontal surfaces are mounted some 3 ft. above the boat. The control fitted is of the Jannus two-lever type, consisting of one lever operating the balancing flaps and another lever operating the elevators and rudder.

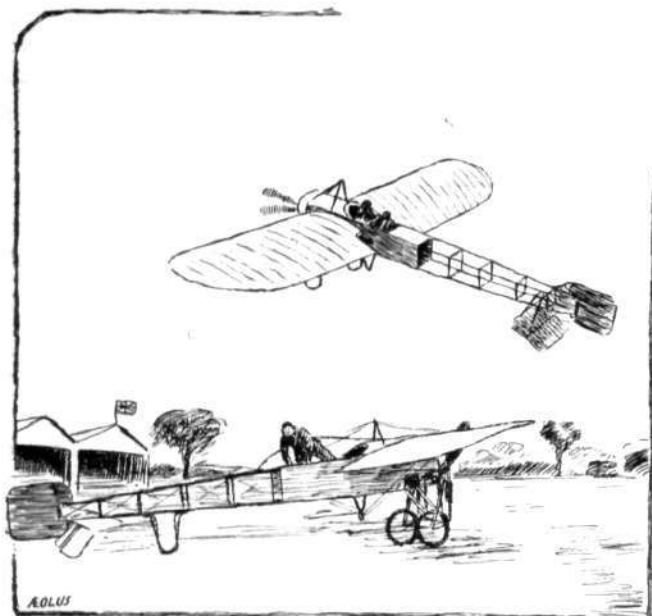
During the tests, which were carried out by Mr. F. G. Ericson and Mr. Antony Jannus, a total load of 2,200 lbs. was carried at a speed varying from 30 to 55 miles per hour with only 60 indicated h.p., so that with full power great things may be expected. The principal dimensions of the Jannus flying boat are: Span, 45 ft. 10 ins.; chord, 5 ft. 6 ins.; gap, 6 ft.; supporting area, 480 sq. ft.; length over all, 28 ft.; length of hull, 25 ft.; weight of machine empty, 1,665 lbs.; useful load, 900 lbs.; range of action loaded, 240 miles.



Plan, front and side elevation to scale of the Jannus 120 h.p. flying boat.

EDDIES.

ALTHOUGH little has been heard of his doings lately, Mr. S. Summerfield, the well-known Blériot pilot of Melton Mowbray, has by no means been idle during the past few months. Mainly he has been engaged testing various monoplanes of original design. Another development as the result of Mr. Summerfield's energetic efforts which is now approaching completion is the formation of a flying school in the Midlands. The location decided upon is Billesley Common, where several hangars are in the course of erection, and it is expected that the first of these will be ready for occupation by the beginning of



next month. By way of a start three Blériot monoplanes have been acquired, a choice that is natural enough when it is remembered that Mr. Summerfield has done most of his flying, or at any rate his best flying, on machines of this make. For instruction purposes the Blériot is a particularly suitable mount, owing chiefly to the excellent chassis which allows a pupil to come down with a considerable side drift without the resulting "cart-wheel" that usually follows a landing of this description on a machine the wheels of which are not free to move sideways as they are on a Blériot. In the higher-powered types also the Blériot is sufficiently fast to make the change to the machines used by the authorities a comparatively easy matter for a pupil who has obtained his "ticket." Three models have, as already mentioned, been purchased, a 25 h.p., a 50 h.p. and a two-seater (presumably a 70 or 80 h.p. machine). In the course of a few weeks a couple of biplanes will be added housed in the hangars, a 45 h.p. and a 60 h.p. two-seater. Already several pupils have been enrolled so that it looks as if the new school is going to be right there from the very beginning. It only now remains for reports to come along of the actual air work. There is undoubtedly an excellent opening for good tuition in the Midlands, and under the management of Mr. Summerfield the new establishment should, to use a well-worn phrase, "fill a long-felt want." Good luck to the new combination.

x x x

From friend Louis Noel we have received another cheerful letter from "somewhere in France." It is pretty hot over there at present, he says (in more senses than one, I'm by way of thinking); and they are evi-

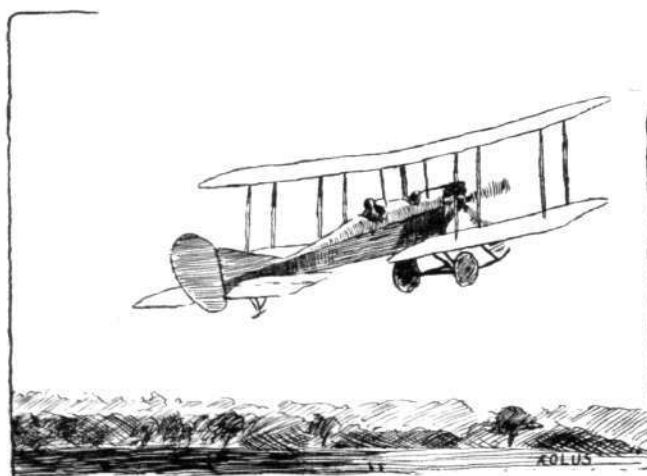
dently not twiddling their thumbs *all* the time, for he mentions that they are up about four a.m. and are "on" till ten. Afternoon work begins at five and they keep going till about nine, or, in other words, till dark. Since the escadrille has got M. Farmans the work is very interesting, and among the functions performed Noel mentions range-finding given to the artillery by wireless, reconnaissance, bomb-dropping, and last, but by no means least, fighting with the excellent "mitrailleuses" with which these machines are equipped. Noel regrets that he has not yet been able to bring down a Boche properly. He says that they do not seem to like M.F.'s. As soon as they see one they do a half turn and are off. Whenever possible they avoid a fight, but if they are forced to give battle they reply with explosive bullets, and then attempt to scuttle away as fast as the 100 h.p. Mercedes will take them. A short time ago Lieut. P., who was up as observer in a Morane, was hit in the shoulder and face by one of these explosive rifle bullets when at a height of 8,000 ft. After being patched up he is now getting on very well again. Noel wishes to be remembered to all friends on this side.

x x x

When paying a short visit to Hendon on Thursday of last week I happened to witness one of the prettiest, or perhaps I should say two of the prettiest, bits of flying that I have seen for quite a long time. An officer of the R.F.C. was just starting off on a B.E. 2c of the improved type when Mr. Rowland Ding of the Northern Aircraft Co. started out to test one of the latest Blackburn-built B.E. 2c's of the standard type. Ding was the first to get off, and was followed a few seconds later by the other B.E. Climbing rapidly until they had reached a sufficient altitude, the two pilots started a series of spirals and steeply banked turns, in some of which the machines, if they were not actually banking vertically, were at least 89 degs., 59 mins. and 59 secs. from the horizontal.

x x x

It was a beautiful sight to see the two machines circling round one another in graceful curves. Once they were flying level, practically side by side, and it was quite surprising how little difference there seemed to be between the speeds of the two models, the Blackburn



standard B.E. 2c being to all intents and purposes as fast as the other. Whether the fact that Ding was flying solo, while the other machine had two on board, had something to do with the slight difference in speed is a ques-

tion. At any rate the weight of the passenger would not, it appears to me, slow down the speed to such an appreciable extent. It seems more probable that the R.F.C. pilot's engine was not quite up to the mark, while that of the Blackburn B.E., built by the Rolls-Royce firm by the way, was pulling like a demon. This was never more noticeable than when "getting off." The angle at which Ding took her up was simply alarming, but there did not seem to be any tendency to stall. This climbing speed is indeed, under present conditions of war, an asset of very high value; it now only remains to incorporate an equally good horizontal speed. When up at a good height Ding repeatedly overclimbed the machine, which could be seen to hesitate for a moment and then quite suddenly flop her nose down until she was at her proper gliding angle. There can be no doubt about the longitudinal inherent stability of this type, and the lateral stability is evidently equally good, judging from the total absence of side-slipping in the steepest of turns.

In this connection I had an interesting argument with a friend who maintained that it is impossible to make a B.E. 2c side-slip, since, he argues, the machine will, if the rudder is left alone with left-hand warp put on, turn to the left in a circle proportional to the amount of bank. My own idea is that the machine in question can be made to side-slip by the following procedure: Full warp

to, say, left, and ruddering to right, gradually returning rudder to central and at the same time pushing elevator lever forward. When the wings are in a nearly vertical position the elevator would, of course, act as a rudder and prevent the tail from swinging outwards, or, in other words, prevent the machine from doing the left-hand turn. The whole experiment, however, is one which I have no particular wish to see carried out in practice, although if attempted at a sufficient altitude it would probably be safe enough, provided that there is no chance of the machine not standing up to the strain.

x x x

Going up for a little spin on one of the M. Farmans the other day accompanied by Mr. Greswell, Birchenough enjoyed his flight so much that he decided to take the upper air, and climbing steadily, he reached a height of 9,000 ft. in the short space of 55 mins. He said he would have liked to have gone another 1,000 ft. but as neither he nor his passenger were dressed for altitude stunts and the cold at that height was extremely uncomfortable, the idea had to be given up. Nine thousand feet in 55 mins is not bad going for a M.F., but then it should be remembered that what Birch. does not know about this machine is probably not worth knowing.

"ÆOLUS."

AIRCRAFT AND THE WAR.

Writing to the *Daily Telegraph* from Rome on the 16th inst., Mr. W. T. Massey said:—

"Yesterday a farmer and shepherds at Via Ostiense, in the neighbourhood of Rome, reported that they had occasionally seen an aeroplane in flight at dusk. Inquiries showed that this could not have been an aviator from the Italian aerodrome at Centocelle, north of Rome, and the informants, on being asked about the machine, gave a description of one of the Taube type. A strict search is being conducted over a wide track of country to discover the aeroplane.

"Another incident which may have no connection with the above was the arrest late last night of several young men who were displaying red and white lights in the heart of Rome near the Quirinal, Consulta, and Ministry of War."

The following Central News message from Amsterdam was received on the 16th inst.:—

"At half-past three this morning three English aviators appeared near Grondarde, south of Ghent, where a Zeppelin shed has been erected. Three bombs were dropped upon the Zeppelin shed. The extent of damage caused is not known. One of the pilots flew over Ghent. He was heavily fired on, and disappeared."

The *Journal* on the 16th received the following from its Nancy correspondent:—

"At about 7.30 p.m. on Tuesday, a squadron of Taubes was sighted advancing towards the St. George's quarter. The machines were flying in couples at a great altitude. They were met with a heavy cannonade. The last four Taubes, possibly as the result of being hit, turned off from their route, but the first two continued to advance, and in spite of sustained and accurate firing, flew over the northern and central quarters as far as the railway station, dropping about ten bombs. The Taubes which had turned back bombed Essy, near the new barracks, which are at present empty.

"At Nancy one of the bombs fell in the Rue St. Jean. Splinters flying about with unequalled violence pierced the windows of a hairdresser's establishment. A woman had her skull split open, and had to undergo the operation of trepanning. Her daughter was killed on the spot, as was a convalescent soldier. A newspaper seller was seriously injured. Another bomb fell in the Rue Craffe, killing a conscript and a woman. Two other persons were injured. The Taubes were pursued for over twenty minutes."

The *Daily Mail* correspondent at Porrentruy (Switzerland) on the 16th inst. reported:—

"At eight o'clock this morning a Taube was seen flying over the French fortress of Belfort at a great height, and was vigorously fired at. Three bombs were dropped on the town, but no damage was done. There was very little excitement among the people."

The following information appeared in the *Liberté* of the 17th inst.:—

"The day after the Germans had tried to bombard Verdun with 15-in. guns from Spincourt, an Aviatik flew over the station to take photographs of the damage which the Germans believed they had done. The pilot came down to 600 ft. from the ground. Two French airmen immediately went up to attack him. Their chase was very short. A few minutes after they had opened fire on him, the pilot was struck by a bullet, and his machine came crashing to the ground."

In the *Handelsblad* of the 17th inst. appeared the following details of an air raid on Brussels:—

"At four o'clock yesterday morning two French aviators attacked Brussels, apparently intending to destroy the balloon sheds. The bombs missed their mark, and the sheds were not damaged. Some of the French projectiles landed on a meadow near Vilvoorde. . . .

"The aviators flew above Brussels, and it was then for the first time since the war began that German shells were fired over the Belgian capital. . . . At 4.30 a.m. the French aviators were out of sight."

The *Daily Telegraph* correspondent, writing on the 17th inst., said:—

"Great activity is being displayed by the Allies' airmen, both along the coast and over the German inland positions. Early yesterday morning three English aviators visited Ghent and dropped bombs on a Zeppelin shed. Between ten and twelve o'clock last night another daring raid was made along the Belgian coast, in which the Allies' flying men threw bombs on the enemies' position at Ostend-Heyst-Knocke. The Germans along the coast used many searchlights to try and follow the course of the airmen, whom they shot at vigorously, but failed to hit."

Writing to the *Daily Chronicle* from Rome on the 17th inst., Mr. M. H. Donohue said:—

"An Italian dirigible has just concluded a successful raid across the Gulf of Trieste into the enemy's territory, the objective being Divezza, an important railway junction in the Istrian peninsula, where a large force of Austrians are concentrating. The airship launched several high explosive bombs, and succeeded in destroying the railway line at several points, despite the fire of anti-aircraft guns and of field-pieces and maxims. The dirigible returned safely to the Italian base."

An official *communiqué* issued in Constantinople on the 17th inst. stated:—

"One of our aviators observed in Kefalo Bay, near Imbros, a battleship of the Agamemnon type, the deck of which was almost

submerged, while her after funnels and masts were completely under water."

A Central News message from Athens on the 17th inst. stated that two German aeroplanes had dropped bombs on the Allies' Camp on the Gallipoli Peninsula.

Regarding the French raid on Karlsruhe reported in our last issue Reuter's correspondent at Amsterdam sent the following message on the 18th inst. :—

"According to the *Frankfurter Zeitung*, the Grand Duke of Baden has sent the following telegram from the front to the Burgo-master of Karlsruhe :

"The Kaiser telegraphs me his deep indignation at the wicked attack on beloved Karlsruhe. The poor innocent victims among civilians have greatly distressed him."

"A telegram from Berlin tries to discredit the French airmen by declaring that they were doubtless aware that in the Castle of the Margrave, which was considerably damaged, were the Grand Duchess Louise and the Queen of Sweden. The telegram says that several splinters flew into the room of the Swedish Baroness Hochschild, and the children of Prince Max of Baden, the roof of whose bed-room was demolished, only narrowly escaped."

In the "wireless" news sent out from Berlin on the 21st there was the following :—

"An official statement referring to the attack by airmen on Karlsruhe explains how heretofore German airmen and airships bombarded places of military importance only, while exceptions were always explicitly mentioned as retaliations to similar enemy measures."

The Geneva correspondent of the *Temps* reported that 27 persons were killed and 60 injured, several of the latter succumbing to their wounds. According to official figures about 70 bombs were dropped, damaging 100 houses. The Exchange correspondent at Rotterdam on the 16th inst. reported that a neutral traveller who had arrived from Karlsruhe said that the damage done was greater than the newspapers had been allowed to state. He stated that over 200 people were killed, while a number of factories engaged in making shells were destroyed.

In a message regarding the fighting round Plava an Exchange correspondent on Saturday said :—

"The Italians are bombarding the Austrian positions from the mountains and from aeroplanes."

From a correspondent at Putte the *Maasbode* received the following information :—

"On Thursday morning an Allied airman attacked a balloon shed near Brussels and dropped several bombs. The damage done is stated to have been slight. The airman was fired at, but it is not known if he was hit."

Writing to the *Daily Telegraph* from Rome on Sunday Mr. A. Beaumont said :—

"The airships and aeroplanes of the land and sea forces co-operating in the same work have destroyed important depôts and railway connections, and a floating battery opportunely bombarded the enemy from the sea, silencing his guns at Duino, and driving him out of his trenches."

"... When the flotilla appeared north, off the mouth of the Tagliamento, it attempted to bombard the naphtha depôts over which the Austrians had already tried to throw bombs from aeroplanes a few days before, but the depôt remains intact."

Mr. M. H. Donohue, writing from Rome on June 20th, said :—

"By way of retaliation the Italians sent two aerial squadrons to worry the enemy. A certain number of dirigibles flew across the Adriatic, and, arriving over Trieste, they bombarded the Sant Andrea ammunition factory, which is slightly north of the city. The crews of the airships were careful to confine their attention solely to such targets as ammunition works, and they did not attempt to damage public or private buildings. A portion of the factory was set on fire and some outbuildings destroyed by the Italian bombs."

"Port Salvore, on the Istrian peninsula, opposite Tagliamento, was also bombarded by Italian aviators. It has been a refitting and sheltering base for Austrian destroyers which lie in wait for

stray shipping beating up the gulf of Trieste. Some small steamers taking refuge at Salvore were destroyed by the attack."

The *Telegraaf* last week received the following details of Allies' air raids on the Gontrude aerodrome east of Ghent :—

"On Wednesday (16th inst.), at seven in the evening, says the account, English airmen appeared above Gontrude and dropped three bombs, in spite of heavy shelling from the German anti-aircraft guns. No damage was done to the aerodrome. The airmen escaped unhurt."

"On Friday at three in the morning, another aeroplane hovering over Ghent was bombarded from three or four sides. After twenty minutes' reconnoitring the aeroplane disappeared."

Mr. James Dunn, writing to the *Daily Mail* from Rotterdam on Monday, said :—

"Allied aeroplanes have dropped bombs on magazines and depôts at Ghent. Extensive damage was done and the raid caused great excitement. Troops were called out to extinguish the fires."

In an official report given out in Constantinople on Monday there was the following :—

"An aircraft shed was also shelled and a fire was caused which destroyed several aircraft. An enemy airman flew over our Asiatic batteries, dropping eight bombs without success."

A special correspondent of the *Daily Mail* at Porrentruy, Switzerland, writing on Tuesday said :—

"At sundown on Thursday Belfort learned that a German airman was making for the fortress. As soon as the news was received the famous French pilot Gilbert, of Paris-Madrid fame, who was trying a new machine, exclaimed, 'Where is he? He is mine,' and immediately started off to meet the enemy. Gilbert was soon but a speck in the distance, and he came across his adversary over Aspach, in Alsace. The aerial fight soon began. Gilbert kept on rising, and passed from one side to the other of the German, who was rising spirally, and firing his machine gun. Gilbert was also firing, and leaving the German for the third time on the left he fired twelve shots from his machine gun. The German was seen to throw up his arms. His machine dipped and crashed to the earth. The bodies of the German pilot and the observer were unrecognisable, and the machine was smashed to bits."

In a Reuter message it was stated that the French machine was riddled with bullets, but the pilot escaped with nothing worse than having his elbow grazed by a bullet.

The *Daily Telegraph* correspondent at Rotterdam on Tuesday wrote :—

"From the islands off the Dutch coast extraordinary activity on the part of Zeppelins is reported. The enemy airships in the last three days have been observed several times flying in various directions. They are engaged both on trial trips and what appears to be regular scouting expeditions over the North Sea. Yesterday observers at Ameland saw three airships, two of which flew westwards in the evening. Shortly afterwards a third appeared, and after manœuvring disappeared again eastwards. This morning from Vlieland a Zeppelin came in sight from the northwards, flew away west, and after an absence of two hours returned and took an easterly direction. I learn, too, that work is in energetic progress at the airship stations in Belgium, where the soldiers are talking of another raid on England on a larger scale than hitherto."

In the official *communiqué* issued by the German Main Headquarters on Tuesday, it was stated :—

"Our airmen bombarded the aerial harbour at Courcelles, west of Rheims."

"Hostile aerial attacks on Bruges and Ostend caused no military damage."

The *Morning Post* correspondent at Amsterdam on Tuesday reported the following :—

"According to an unconfirmed rumour, a Zeppelin caught fire near Zeebrugge last night and fell into the sea."

"Early on Sunday morning eight allied aviators appeared over Iseghem and Emelghem. Seven bombs were dropped in the latter place, three civilians being killed and eight severely wounded. Much material damage was done, the churchyard being nearly completely destroyed. At Iseghem five bombs were dropped, and one struck the railway station. The line was also damaged at several points. The airmen were nearly an hour above Iseghem and Emelghem, and they returned safely."

Models

Edited by V. E. JOHNSON, M.A.

The Best Length for a Fuselage.

By REV. ALFRED J. BARTLETT.

"IN some notes written on the 10th September, 1913, I drew attention to the advantages of a short fuselage, having experimented exhaustively in this direction, and I pointed out that the chief advantage is *quickness of recovery in the event of a dive*, on the analogy of a short-keeled boat, which all yachtsmen will understand.

"May I now add the following observations?—

"In nature the best gliders have the tail-plane small and close to the body, e.g., the seagull, and this is contracted to the smallest dimensions, *except when required*, while the tail-less butterfly, though not perhaps a true monoplane, glides to perfection, e.g., the fritillary.

"This introduces a further interesting problem, viz., not the position but the *function* of the tail-plane. Hypothetically the best glider will be one which requires no tail-plane, except in emergency, because the drag exerted in correcting continuously the faulty tendency of the wing planes reduces speed, besides interfering with the action of the wing tips or ailerons.

"Hence arises the question of the desirability of a true 'monoplane,' i.e., a glider in which the wing planes possess independent fore and aft stability. The problem itself was experimentally solved by me in years gone by, in proof of which I send you a battered tail-less paper model of a seagull, which you will find to glide perfectly; also a butterfly, which, being heavily built, must be launched with some force.

"The result is obtained by means of *conflicting positive and negative surfaces*. Doubtless this reduces speed somewhat, but less, I think, than the dragging tail-plane, and with the advantage of greatly increased steadiness.

"Adopting this principle, I would employ in practice a contractible tail-plane, normally closed, but expanding and lifting when it is desired to soar, or to correct a dive or 'pancake.'

"These broad observations are so far proper to the subject of fuselage or rather tail-plane, but they open up questions of wing-formation and speed variation upon which, with your kind consent, I will give the result of my experiments later."

Mr. Bartlett encloses with his communication several models of the various gliders. Generally speaking, these glide remarkably well, especially in rather gusty winds. The best one, on the whole, is, we think, the one that is herewith reproduced, Fig. 1. We reproduce below the chief points in Mr. Bartlett's original notes:—

"In view of Lieutenant Dunne's discoveries a description of some independent experiments and theories which led me years ago to similar discoveries may interest your readers.

"I first noticed, about the year 1886, the surprising 'lift' of an umbrella held nearly parallel with the wind. This suggested 'lifting' wings with dipping front edge now so common.

"Next, finding the lift excessive as my model gained speed, I greatly reduced the dip amidships, and leaving the trailing edge normal throughout, I exaggerated the dip towards the wing tips so as

to present a *reversed plane* which should partially counteract the lift without appreciably checking speed. Such gliders held upside down in the palm and launched as if bowling at the wickets will be found

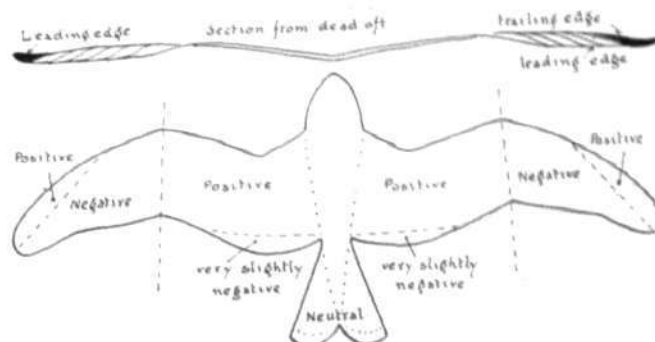


Fig. 1.—The Rev. A. J. Bartlett's model.

to travel at high speed horizontally. In a full-size machine this 'reversed plane' would be increased in pitch or extent with increase of speed, as sometimes seen in birds when gliding downwards against wind. (Fig. 2)

"My next discovery was the *facility of steering* by means of such wing tips, the minutest variation of pitch producing a marked variation in direction, thus dispensing with rudder or fins. Balanced by this means my glider flew perfectly straight. But the most surprising discovery was its *extreme steadiness and absence of oscillation*. I attributed this to the rigid 'gripping' of the wing between the two opposing pressures.

"A tail set at an inappreciable V secured fore-and-aft stability and vertical steering.



Fig. 2.—Sketch of pigeon "gliding" against a strong wind (seen through 12 power field glass). Notice the twist in the wings becoming negative from the middle to the outer ends.

"Later I varied the shape, though retaining these principles. All were steady in strong winds, and even quite unpromising shapes when carefully balanced glided admirably.

"My models were shown privately to friends many years ago, more recently (1909) to a director of an aeroplane company, and later to Col. Capper, who exclaimed, 'You have got *our* principle, and forthwith made a paper model of the 'Dunne' for my enlighten-

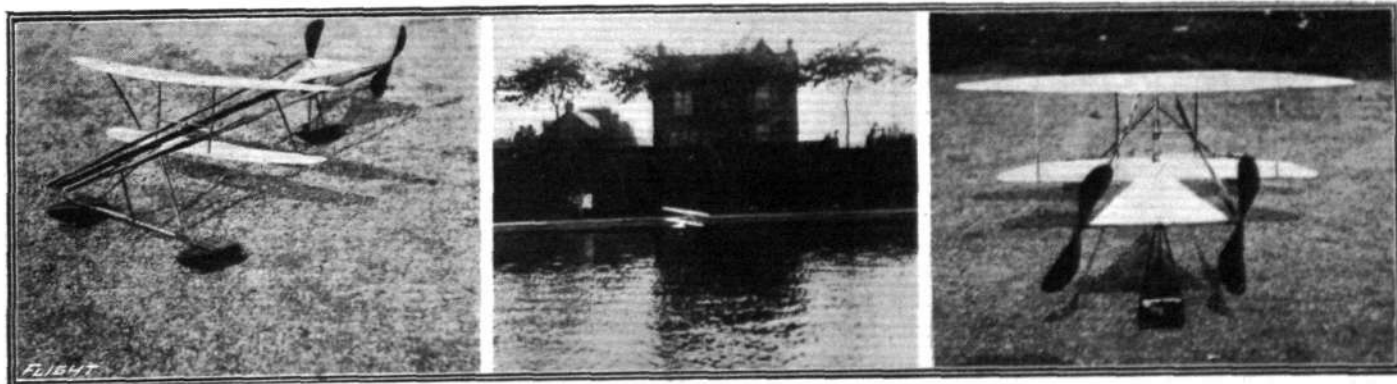


Photo. by James C. Balden.

Mr. J. Mills' twin-screw water biplane model, which appeared at a recent meeting of the Scottish Aeronautical Society Model Aero Club. View from in front and from behind, and, in the centre, just getting off. Span, top plane, 25 ins. by 4 ins.; Span, lower plane, 20 ins. by 4 ins.; Gap 5 ins.; Length 33 ins.; Propellers 7½ ins., 13 ins. pitch approx.; Rubber, 4 strands, 1/16 in. each; Floats (front), 6 ins. by 1½ ins. by 1½ ins. (rear); Total weight 7 ozs.; Tail 11 ins. by 7½ ins.

ment. I cannot, of course, claim precedence, but I was 'pleased and proud' to find that my independent theories and experiments were on right lines. At the same time, I would point out that my machine differs from the 'Dunne' in that it requires a *tail*. Further, this member is (in marked contrast to any I have seen) *extremely short and close up to the wings*. My model was a seagull, and as an old yachtsman I know the value of a *short keel* when manœuvring in crowded waters, hence by analogy the short tail should give better command. And in practice my gliders will turn in a very small space, either horizontally or vertically, consequently they can be thrown or dropped in every conceivable position with only a momentary capsize, from which they recover instantly and sail off on an even keel. They do not possess undesirable 'automatic stability,' but rather what may be termed 'flexible equilibrium' like a yacht. Given sufficient 'air-room' they *could not dive*.

"Another discovery of possible interest was the V-shaped entering edge of beetle-wing cases here shown in section (Fig. 3). This probably serves to secure the folded wing, but (as the wing

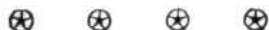


Fig. 3.—V-shaped entering edge of beetle-wing cases.



Fig. 4.—Downwardly-turned entering edges.

case itself serves a double purpose) it may also serve to imprison the air beneath the entering edge and assist its expulsion under the trailing edge. This suggests the experiment of downwardly-turned entering edges, perhaps *hinged as anterior ailerons*." (Fig. 4.)



Official Accounts of the X Air Raids.

In the House of Commons, on the 21st, Mr. King asked for an explanation of discrepancies in the official accounts of the raid on the N.E. coast on the night of June 6th. In reply, Dr. Macnamara said that immediately after the air raid, five was the number of deaths reported and included in the official *communiqué*. As the result of further and more complete inquiries, it was ascertained that the number of deaths was 24, including those who subsequently died of injuries or shock. The Admiralty issued a full statement of casualties so far as they were known at the time. Later information may make it necessary for an addition to be made to the original *communiqué*. The Home Secretary would issue the list of casualties in future.

Young Wireless Operators Wanted.

A NUMBER of young men, who have attended polytechnics or technical schools, are required for the purpose of training as telegraph and wireless operators. After training they will be attached either to the Royal Engineers or the Royal Flying Corps. All information may be obtained from the Polytechnic Education Department, 307, Regent Street, London, W.

S.M.M.T. and the Industry.

AT its last meeting the Council of the Society of Motor Manufacturers and Traders considered the request of the Aero Committee that one or more of representatives of aeroplane constructors should be co-opted to the Council, and it was unanimously resolved to co-opt Mr. H. White Smith, of the British and Colonial Aeroplane Co., Ltd., makers of the "Bristol" machines.



PUBLICATIONS RECEIVED.

National Physical Laboratory Report for the Year 1914-15. Teddington: The National Physical Laboratory.

All About Flying. By Gertrude Bacon. London: Methuen and Co., Ltd. Price 1s. net.

The Aeroplane. By A. Fage, A.R.C.Sc. London: Charles Griffin and Co., Ltd. Price 6s. net.

Aero Engines. By G. A. Burls, M.Inst.C.E. London: Charles Griffin and Co., Ltd. Price 8s. 6d. net.

Catalogue.

A.T. Speedometer. The A.T. Speedometer Co., Ltd., 140, Long Acre, London, W.C.

NEW ISSUE.

The Blériot Manufacturing Aircraft Co., Ltd.

WITH the object of providing capital for the manufacture of a much larger number of aeroplanes to the order of the British Government for the flying services of the Admiralty and the War Office, by extending the factory premises in this country of M. Blériot, a prospectus has been issued this week inviting subscriptions to the above-named Company. The capital is £200,000, divided into 180,000 10 per cent. cumulative and participating ordinary shares of £1 each and 400,000 deferred ordinary shares of 1s. each. The present issue consists of 95,000 of the 10 per cent. cumulative ordinary shares, and 100,000 of the deferred ordinary shares.

The basis upon which the transfer of the business has been arranged appears to give promise of an attractive investment, and in view of the enormous business which is now in full operation by reason of the immediate requirements of the war, there should be every prospect of more than the figures set forth in the prospectus being realised. Irrespective of war requirements, however, the actual pre-war earnings already show a very handsome return on the capital of the company now offered for subscription. The division of any profits is set forth in the prospectus as 10 per cent. cumulative dividend to the participating ordinary shares, and in addition 30 per cent. of any further profits in any year available for distribution, the balance of such further profits belonging to the holders of the deferred ordinary shares. Applicants for each £100 of cumulative shares are entitled to also apply and have allotted to them 50 1s. deferred ordinary shares, which, as will be seen, carry with them the balance of profit out of each year's earnings. The sales of Blériot aeroplanes for the past five years show a very steady increase, and are quite independent of any war conditions, ranging from £114,668 in 1910 to £322,920 for the 18 months ending January, 1915. According to the estimate of the directors based upon the net profits—£39,393 17s. 10d.—under the working figures of the business for the twelve months ending March 31st, 1915 (although they consider these profits will be largely exceeded), after providing for directors' fees, these earnings are sufficient to not only pay £9,000 a year to M. Blériot, on the share capital which will remain in his name, but will secure a return of over 15½ per cent. to the holders of the cumulative and participating ordinary shares.

The purchase consideration to the vendors and promoters in respect of the goodwill and all Blériot rights for the United Kingdom and the British Colonies is £100,000, payable as to £30,000 in cash, £43,000 in participating ordinary shares, and £27,000 in cash or shares at the option of the promoters, the Army and Navy Contract Corporation.

It is notified in the prospectus that the Treasury has been consulted under their special veto notification of January last, and have raised no objection to this issue. The directors are Lieut. His Grace the Duke of Manchester, Mr. William A. Casson, Admiral the Honorable Sir Edmund R. Fremantle, Sir Algernon Guinness, Bart., and Mr. J. H. Swinburn.

Full prospectuses may be obtained from any of the branches of the bankers, the Union of London and Smiths Bank, Ltd., or the secretary at the offices, Clun House, Surrey Street, Strand, W.C.



NEW COMPANY REGISTERED.

Sheds, Ltd.—Capital £5,000, in £1 shares. To enter into contracts for the erection of sheds, aerodromes, hangars, and other buildings for the housing of troops and for the manufacture or preparation of munitions, materials, and accessories for use in war, &c.

FLIGHT.

44, ST. MARTIN'S LANE, LONDON, W.C.
Telegraphic address: Truditur, London. Telephone: 1828 Gerrard.

SUBSCRIPTION RATES.

FLIGHT will be forwarded, post free, at the following rates:—

UNITED KINGDOM.			ABROAD.		
	s.	d.		s.	d.
3 Months, Post Free...	3	9	3 Months, Post Free...	5	0
6 " " " " " " " "	7	6	6 " " " " " " " "	10	0
12 " " " " " " " "	15	0	12 " " " " " " " "	20	0

Cheques and Post Office Orders should be made payable to the Proprietors of FLIGHT, 44, St. Martin's Lane, W.C., and crossed London County and Westminster Bank, otherwise no responsibility will be accepted.

Should any difficulty be experienced in procuring FLIGHT from local newsvendors, intending readers can obtain each issue direct from the Publishing Office, by forwarding remittance as above.

The Editor is always pleased to consider articles or photographs suitable for the pages of FLIGHT, which will be paid for at the usual rates. All communications should be addressed to the Editor, FLIGHT, 44, St. Martin's Lane, London, W.C.